

## PATENT CLAIMS

### 1. Transmitter comprising

- a sensor (1),
- which serves for registering a physical parameter (X) and transducing such into an electrical quantity,
- a signal pre-processor (3), which serves for converting the electrical quantity into a raw signal (R),
- a signal processor (4), which serves for converting the raw signal (R) into a measurement signal (M),
- an output stage (7), which serves for issuing an output signal corresponding to the measurement signal (M), and
- a monitoring unit (9),
- which in operation compares the output signal with an auxiliary signal (H) derived from the raw signal (R) and triggers a safety-directed adjustment of the output signal, when a difference between the output signal and the auxiliary signal (H) exceeds a predetermined limit.

### 2. Transmitter as claimed in claim 1, wherein the output stage (7) issues an analog output signal,

- which is taken across a resistor (10),
- which is fed to the monitoring unit (9), and
- which is registered in the monitoring unit (9) by means of a measuring circuit (11).

3. Transmitter as claimed in claim 1, further comprising an electronic unit (5), which serves for processing the fed measurement signal (M) according to an application-specific transfer function (F).

4. Transmitter as claimed in claim 1, wherein an adjustment of a zero-point and a scaling of the measurement signal (M) is accomplished by the application-specific transfer function (F).

5. Transmitter as claimed in claim 3, wherein

- the monitoring unit (9) includes a second electronic unit (13),
- wherein the transfer function (F) is stored in a memory (17) assigned to the unit (13), and
- the second electronic unit (13) in operation
  - derives the auxiliary signal (H) from the raw signal (R) by processing the raw signal (R) according to the application-specific transfer function (F), and
  - compares the auxiliary signal (H) with the output signal.

6. Transmitter as claimed in claim 1, wherein the safety-directed adjustment of the output signal is an alarm signal.

7. Method for start-up of a transmitter as claimed in claims 3 or 5, wherein

- the transfer function (F) of the user is fed to the first electronic unit (5) via a communication interface, or a transfer

- function (F) present in the transmitter is chosen,
- the transfer function (F) is transmitted via a data line (19) from the first electronic unit (5) to the second electronic unit (13), and
  - is stored in a memory (17) assigned to the second electronic unit (13).